

ABSTRACT

5 An implantable drug delivery system includes an infusion pump assembly
with a fluid outlet, a fluid delivery pathway extending from the pump outlet to a target
tissue site; and a controlled release material unit positioned in the fluid delivery
10 pathway to release a drug or bioactive material into the delivery pathway. The pump
assembly delivers fluid as a high flow infusion flow in said pathway, entraining drug
material released by the release unit and establishing a pressure gradient at the distal
end of the pathway that results in convection-enhanced transport such that the
15 released drug(s) or treatment material enter the target tissue site with enhanced
penetration depth and/or concentration. The pump delivers a carrier fluid that may
reside in an external or in an implanted reservoir, or that may be an endogenous fluid,
such as plasma or CSF.

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